

A Division of Marin Environmental, Inc.

21 October 1996

Mr. Conrad Bellavance Columbia Forest Products 349 Union Street Newport, VT 05855

Dear Mr. Bellavance:

RE: Analytical Test Results — Columbia Forest Products, Newport, Vermont

Dear Mr. Bellavance:

The following report presents the results of soil and ground-water sampling conducted by Ground Water of Vermont (GWV) at the Columbia Forest Products veneer manufacturing facility in Newport, Vermont. Sampling results indicate that residual petroleum contamination beneath a former 15,000-gallon heating-oil UST appears to be confined to subsurface soils and has not impacted the ground water. Elevated levels of Total Petroleum Hydrocarbons, but no volatile organic compounds, were detected in a soil sample collected from beneath one of two removed heating-oil USTs. Ground water in the vicinity of the USTs did not contain detectable levels of petroleum compounds. No sensitive receptors appear to be threatened by the residual soil contamination. On the basis of these findings, GWV believes that no further investigation is warranted at this site.

Background Information

The site is located at 349 Union Street, approximately one mile north of downtown Newport in a combined commercial/residential section of the city. The site consists of the manufacturing facility, log yard, adjoining offices and parking areas. The site and all nearby buildings are served by Newport municipal drinking water and wastewater systems. The nearest surface body water, Lake Memphremagog, is located approximately 2,000 feet north of the site. A site location map is included as Figure 1 of Appendix A.

Sampling was prompted by evidence of soil contamination discovered during the removal of two registered heating oil underground storage tanks (USTs). When the tanks were removed on 12 August 1996, both tanks were found to be in fair condition with some heavy rust, scaling and pitting, but no apparent holes. No petroleum sheens or free-phase petroleum product were observed in the tank excavations. Photoionization detector (PID) screening of soils in the vicinity of the USTs, however, suggested the presence of residual contamination, with PID readings as

1

high as 107 parts per million (ppm) in soils under the 15,000-gallon heating-oil UST (UST #1). Removal of all contaminated soils was not considered feasible, due in part to the proximity of structural building elements, the presence of a concrete retaining wall and limits of the excavation equipment. Excavated soils were not backfilled due to pending construction activity and remain stockpiled on-site. Ms. Susan Thayer, of the Waste Management Division, was notified of the suspected release on 12 August 1996.

Soil Sampling and Analysis

In an effort to quantify the degree of contamination and to better evaluate a solvent or lacquer-like odor in soils beneath the former UST #1, one composite soil sample was collected from the bottom of the UST excavation, transported in an ice-filled cooler under chain-of custody, and analyzed for volatile organic compounds (VOCs) by EPA Method 8260 and for Total Petroleum Hydrocarbons (TPH) by modified EPA Method 8100 at a Vermont-certified laboratory. Sample results have been summarized in Table 1 below.

The soil analytical results showed levels of TPH to be 4,650 parts per million-mass (ppm-m) with no detectable volatile organic compounds. Although no Vermont or Federal standards currently exist governing TPH levels in soil, the Vermont Department of Environmental Conservation (VT DEC) has established a guideline TPH level of 1,000 ppm for landfarmed petroleum-contaminated soils, below which treatment is considered to be complete and the VT DEC allows surface thinspreading.

Table 1. Summary of Soil Test Results

	Sample ID	Date Sampled	VOCs by EPA 8260 (ppb)	TPH (ppm)
1	CFP UST #1	8/12/96	ND*	4,650

^{*}None Detected

Determination of Ground-Water Flow Direction and Gradient

Because soils beneath the removed 15,000-gallon heating-oil UST had elevated TPH levels, GWV evaluated whether ground water had been impacted.

Fluid levels were measured in each of the four existing leak-detection monitoring wells on 2 October 1996. Water-table elevations were computed for each monitoring well by subtracting the measured depth-to-water readings from the surveyed top-of-casing elevations, which are relative to an arbitrary 100.00-foot datum. Water-level measurements and elevation calculations are presented in Table 2. The ground-water contour map in Figure 3 was prepared using this data.

V95061

Page 3

Ground water in the unconfined surficial aquifer beneath the site appears to be flowing in a northward direction toward Lake Memphremagog, as had been presumed. The average groundwater gradient was about 0.36%.

Table 2. Ground-Water Elevation Data

Well I.D.	Top of Casing Elevation	Depth to Water	Water Table Elevation
MW-1R	99.64	21.47	78.17
MW-2	100.00	21.98	78.02
MW-3	96.70	18.63	78.07
MW-4	96.78	18.81	77.97

All values reported in feet relative to arbitrary datum

Ground-Water Sampling and Analysis

No gasoline or petroleum compounds were detected in the wells surrounding the former UST location or in those immediately downgradient (MW#1R, 2 and MW#3, 4 respectively). All tested compounds were below analytical detection limits, and no unidentified peaks were observed on any of the sample chromatograms. Analytical results for all the samples are summarized in Table 3. Laboratory report forms are included in Appendix B.

Table 3. Ground-Water Analytical Results 2 October 1996

Location	Benzene	Toluene	Ethyl benzene	Xylenes	Total BTEX	MTBE	TPH
MW-1R	ND<1	ND<1	ND<1	ND<1	ND	ND<1	ND<1
MW-2	ND<1	ND<1	ND<1	ND<1	ND	ND<1	ND<1
MW-3	ND<1	ND<1	ND<1	ND<1	ND	ND<1	ND<1
MW-4	ND<1	ND<1	ND<1	ND<1	ND	ND<1	ND<1
Blank	ND <1	ND <1	ND <1	ND <1	as ND	ND <1	N/A
VGES	5	2,420	680	400		40	_

Results in parts per billion (ppb), except TPH, which is in parts per million (ppm) Notes:

ND: None detected at indicated detection limit.

TBQ: Trace below quantitation limit.

VGES: Vermont Groundwater Enforcement Standard

Duplicate sample is from MW-2. N/A: Not analyzed for this parameter

Summary

In summary, elevated levels of Total Petroleum Hydrocarbons, but no volatile organic compounds, were detected in a soil sample collected from beneath one of two removed heating-oil USTs from the Columbia Forest Products facility in Newport, Vermont. Ground water in the vicinity of the the USTs did not contain detectable levels of petroleum compounds. The absence of detectable levels of VOCs in soil and ground water around the UST suggests that the risk of vapor impact to nearby buildings is not significant. The site and all surrounding properties are served by the Newport municipal water system, which obtains water from a drilled well located approximately 1.5 mile west and hydraulically cross-gradient of the site. The fine-grained nature of soils in the surficial aquifer beneath the site, together with the fact that the nearest downgradient surface-water body is located approximately 2,000 feet away, suggest that the risk of impact to surface water quality is also very low. On the basis of these findings, GWV believes that no further investigation is warranted at this site.

Please call me if you have any questions or concerns about this work.

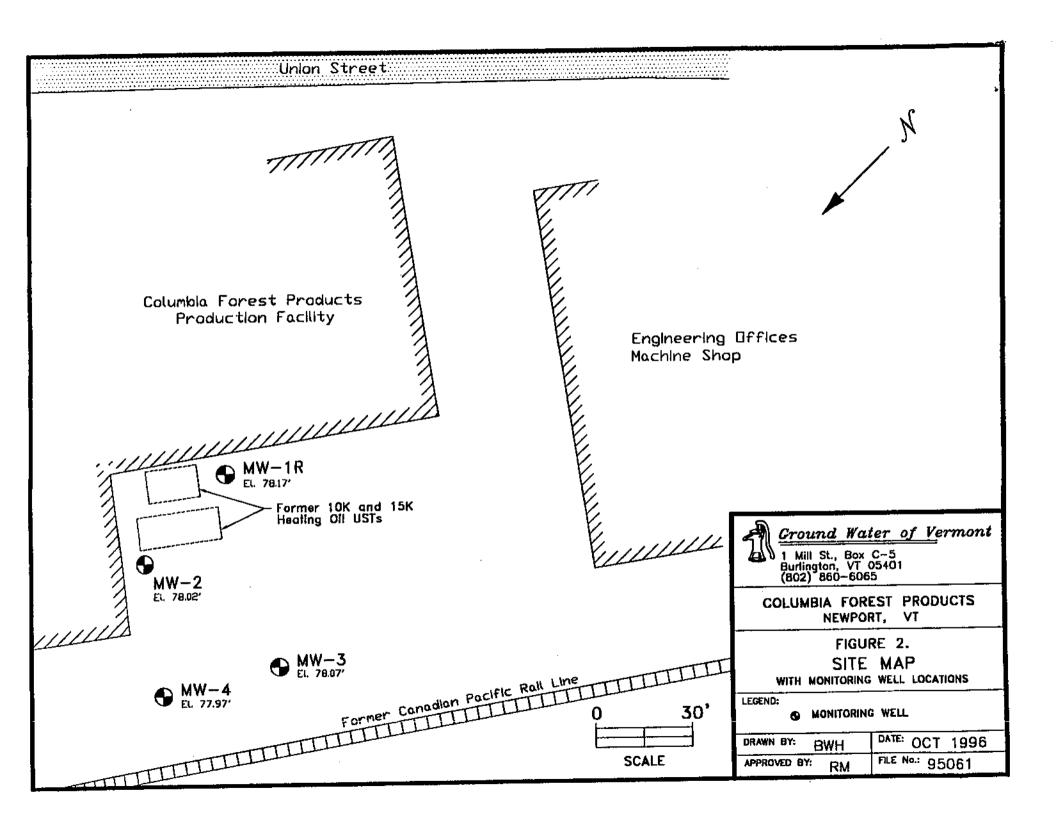
Sincerely,

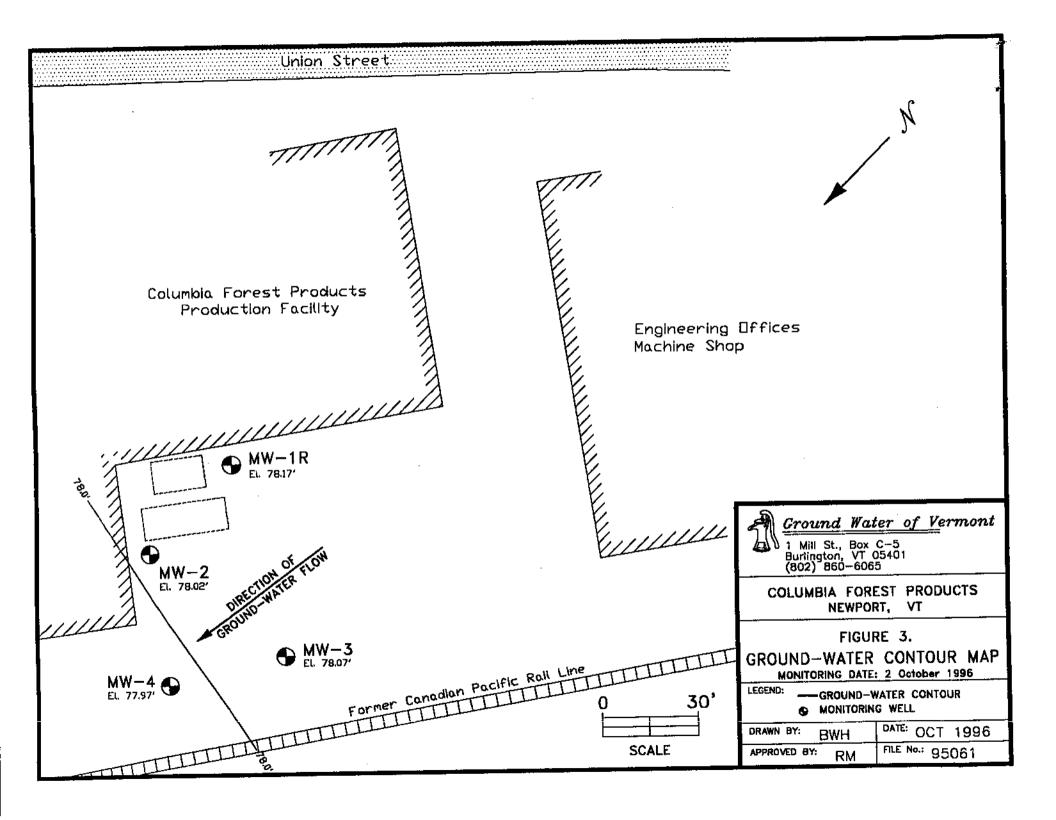
Bruce Hamilton Environmental Engineer

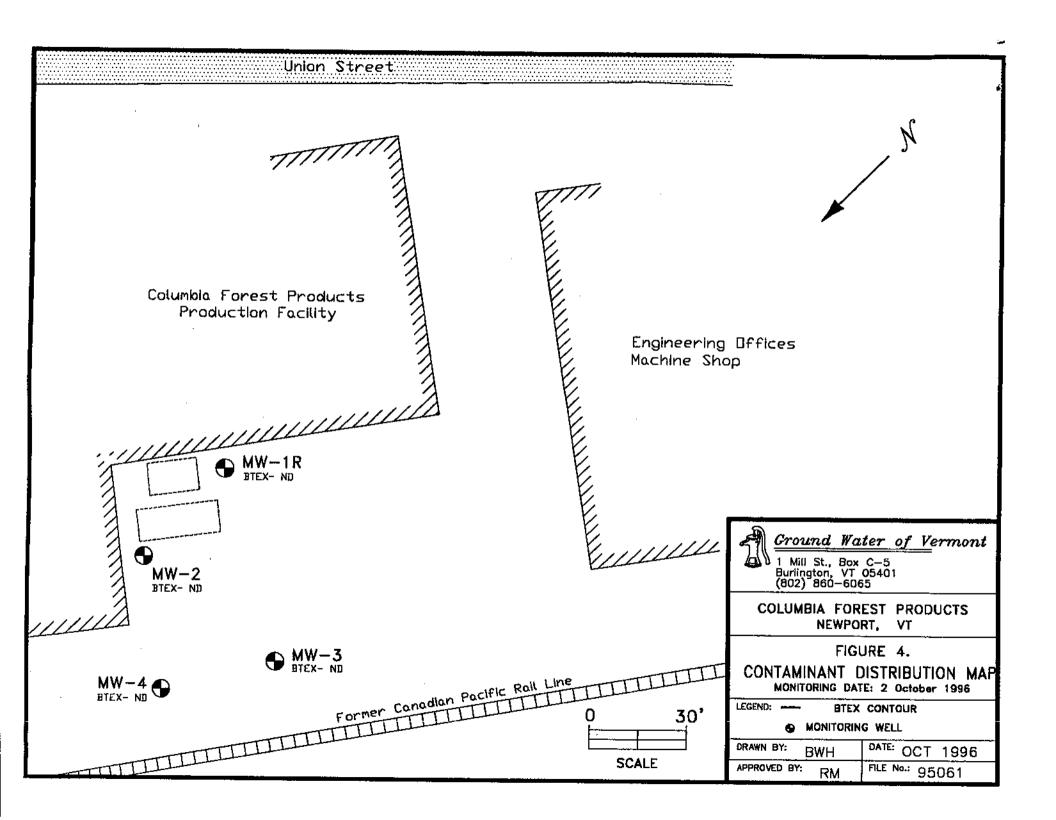
Attachments REF: 95061R02.doc

APPENDIX A

Figures







APPENDIX B

Laboratory Report Forms

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: GroundWater of Vermont

PROJECT NAME: Columbia Forest Products

DATE REPORTED: August 26, 1996 DATE SAMPLED: August 12, 1996 PROJECT CODE: GWVT1742

REF. #: 92,434

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated proper sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D. Laboratory Director



32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: August 26, 1996

CLIENT: GroundWater of Vermont PROJECT: Columbia Forest Products

PROJECT CODE: GWVT1742 COLLECTED BY: Bruce Hamilton DATE SAMPLED: August 12, 1996 DATE RECEIVED: August 13, 1996

Reference #	Sample ID	Concentration (mg/kg as received) ¹
92,434	CFP UST #1; 1210	4,650.

Notes:

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 V95061

CHAIN-OF-CUSTODY RECORD

Site 1	Project Name: Columbia Forest Products Site Location: Newport VT I Mill St. Box C-5								5 B	WAI	erof VT	OSHOÌ	Bill	ing Address:		***************************************	
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32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: GroundWater of Vermont

PROJECT NAME: Columbia Forest Products

DATE REPORTED: August 15, 1996 DATE SAMPLED: August 12, 1996 PROJECT CODE: GWVT1741

REF. #: 92,433

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated proper sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D. Laboratory Director



32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

LABORATORY REPORT

EPA METHOD 8260 SOIL MATRIX

CLIENT: GroundWater of Vermont

PROJECT NAME: Columbia Forest Products

REPORT DATE: August 15, 1996 DATE SAMPLED: August 12, 1996 DATE RECEIVED: August 13, 1996 ANALYSIS DATE: August 15, 1996 PROJECT CODE: GWVT1741

REF #: 92,433

STATION: CFP UST #1 TIME SAMPLED: 1210 SAMPLER: Bruce Hamilton

<u>Parameter</u>	Detection Limit (ug/kg) ¹	Concentration As Received (ug/kg)
Benzene	100	ND^2
Bromobenzene	100	ND
Bromochloromethane	100	ND
Bromodichloromethane	100	ND
Bromoform	100	ND
Bromomethane	100	ND
n-Butylbenzene	100	ND
sec-Butylbenzene	100	ND
Carbon tetrachloride	100	ND
Chlorobenzene	100	ND
Chloroethane	200	ND
Chloroform	200	ND
Chloromethane	500	ND
(2&4)Chlorotoluene	100	ND
Dibromochloromethane	100	ND
1,2-Dibromo-3-chloropropa	ane 100	ND
1,2-Dibromoethane	100	ND
Dibromomethane	100	ND



REF #: 92,433

Laboratory Services

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

<u>Parameter</u>	Detection Limit (ug/kg)	Concentration As Received (ug/kg)
1,2-Dichlorobenzene	100	ND
1,3-Dichlorobenzene	100	ND
1,4-Dichlorobenzene	100	ND
Dichlorodifluoromethane	500	ND
1,1-Dichloroethane	100	ND
1,2-Dichloroethane	100	ND
1,1-Dichloroethene	100	ND
cis-1,2-Dichloroethene	100	ND
trans-1,2-Dichloroethene	100	ND
1,2-Dichloropropane	100	ND
1,3-Dichloropropane	100	ND
2,2-Dichloropropane	100	ND
1,1-Dichloropropene	100 .	ND
Ethylbenzene	100	ND
Hexachlorobutadiene	100	ND
Isopropylbenzene	100	ND
p-Isopropyltoluene	100	ND
Methylene chloride	500	ND
Naphthalene	100	ND
n-Propylbenzene	100	ND
Styrene	100	ND
1,1,1,2-Tetrachloroethane	100	ND
1,1,2,2-Tetrachloroethane	100	ND
Tetrachloroethene	100	ND
Toluene	100	ND



REF #: 92,433

Laboratory Services

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

<u>Parameter</u>	Detection Limit (ug/kg)	Concentration As Received (ug/kg)
1,2,3-Trichlorobenzene	100	ND
1,2,4-Trichlorobenzene	100	ND
1,1,1-Trichloroethane	100	ND
1,1,2-Trichloroethane	100	ND
Trichloroethene	100	ND
Trichlorofluoromethane	100	ND
1,2,3-Trichloropropane	100	ND
1,2,4-Trimethylbenzene	100	ND
1,3,5-Trimethylbenzene	100	ND
Vinyl chloride	500 .	ND
Total Xylenes	100	ND
MTBE	100	ND

NUMBER OF UNIDENTIFIED PEAKS: >10

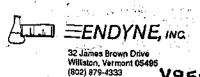
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 90% Toluene-d8: 101% 4-Bromofluorobenzene: 98%

PERCENT SOLIDS: 96%

Notes:

- 1 Detection limit increased due to high levels of non-target contaminants. Sample run at a 10% dilution.
- 2 None detected



90 UZZ CHAIN-OF-CUSTODY RECORD

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32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: GroundWater of Vermont

PROJECT NAME: Columbia Forest Products

REPORT DATE: October 10, 1996 DATE SAMPLED: October 2, 1996 PROJECT CODE: GWVT1375

REF.#: 94,531 - 94,536

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D. Laboratory Director

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

EPA METHOD 8020--PURGEABLE AROMATICS

94,532

Duplicate

94,531

Trip Blank

CLIENT: GroundWater of Vermont

DATE RECEIVED: October 3, 1996

94,535

MW-3

PROJECT NAME: Columbia Forest Products

REPORT DATE: October 10, 1996

94,533

MW-1R

94,534

MW-2

CLIENT PROJ. #: V95-061

Ref. #:

Benzene Chlorobenzene

1,2-Dichlorobenzene

1,3-Dichlorobenzene 1,4-Dichlorobenzene

Ethylbenzene Toluene

Xylenes

MTBE

Site:

PROJECT CODE: GWVT1375

one.	I trip mank	Dupiteate	14f 44-17/	101 71 -2	172 17-5
Date Sampled:	10/2/96	10/2/96	10/2/96	10/2/96	10/2/96
Time Sampled:	8:30	NI	9:15	9:15	9:00
Sampler:	B.H./B.S.	B.H./B.S.	B.H./B.S.	B.H./B.S.	B.H./B.S.
Date Analyzed:	10/9/96	10/10/96	10/9/96	10/9/96	10/9/96
UIP Count:	0	0	0	0	0
Dil. Factor (%):	100	100	100	100	100
Surr % Rec. (%):	99	95	98	93	93
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
Benzene	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1
Xylenes	<1	<1	<1	<1	<1
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Ref. #:	94,536		T -	 	1
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Sampler:	B.H./B.S.				ļ
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UIP Count:	0				
Dil. Factor (%):	100				
Surr % Rec. (%):	94	<u> </u>			
Parameter	Conc. (ug/L)				
					

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

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OWN DIVERSITY CHAIN-OF-CUSTODY RECORD

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32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: GroundWater of Vermont

PROJECT CODE: GWVT1376

PROJECT NAME: Columbia Forest Products/#V95-061 REF. #: 94,537 - 94,541

DATE REPORTED: October 8, 1996 DATE SAMPLED: October 2, 1996

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D. Laboratory Director



32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: October 8, 1996

CLIENT: GroundWater of Vermont

PROJECT: Columbia Forest Products/#V95-061

PROJECT CODE: GWVT1376

COLLECTED BY: Bruce H., Brian S. DATE SAMPLED: October 2, 1996 DATE RECEIVED: October 3, 1996

Reference #	Sample ID	Concentration(mg/L) ¹
94,537	Duplicate	ND^2
94,538	MW-1R; 915	ND
94,539	MW-2; 915	ND
94,540	MW-3; 900	ND
94,541	MW-4; 900	ND

Notes:

- 1 Method detection limit is 1.0 mg/L.
- 2 None detected

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333

CHAIN-OF-CUSTODY RECORD

Project Name: Columbia Forest Products Site Location: Newport of		Reporting Address: 1 m: 11 St Box C-5 Burlington, UT 05401					Billing Address:			
Endyne Project Number: GWV 27	95-661 Co	mpany: Go ntact Name/	our de voc			San	npler Name: Brue one #: 860 - 60		, Brian S	•
Lab# Sample Location	Matrix	G C R O M M B P	Date/Time	333 <u>annan</u>	Type/Size	FledR	esults/Remarks	Analys Requir		
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94540 Made 30 10 10 10			900		1 /	<u>. </u>				
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Relinquished by: Signature	Reco	eived by: Signa	ture M	1 /2	aunl	Date/	Time 10/3/	96	11:20	
New York State Project: Yes No No	e de la companya della companya della companya de la companya della	Requested	Analys	es						
1 pH 6 TKN 2 Caloride 7 Total P	11		\$	16	Metals (Specify)	21	EPA 624	. 26	EPA 8370 B/N c	r Acid
	12				Coliforn (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020	
3 Ammonia N 8 Total Diss. P 4 Nitrite N 9 BOD	13	<u> </u>		18	BTEX BTEX	23	EPA 418.1	28	EPA 8080 Pest/I	СВ
5 Nitrate N 10 Alkalinity	15		ty		EPA 601/602	24	EPA 608 Pest/PCB EPA 8240		- -	
29 TCLP (Specify; volatiles, semi-volatiles, metals, perticide	H	100					217 0270		· · · · · · · · · · · · · · · · · · ·	·····
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